

## **ABSTRACT**

A method and system is presented for accurately measuring the two phase flow rate of a fluid mixture that includes two different phase components. Capacitance tomography measurements are made in order to determine the concentration ratio of the different phase components within the fluid. Approximate flow measurements are made by transmitting, for example, ultrasound waves through the fluid mixture, and measuring the different speeds of propagation of the ultrasound waves through the different phase components of the fluid mixture. The exact flow rate of the fluid mixture is determined using the concentration ratio obtained from the tomographic measurements, and the approximate flow measurements made, for example, by ultrasound sensing.